

USER'S MANUAL

PMB-562LF

**Mini-ITX Motherboard
With VGA/Sound/2LAN**

PMB-562LF M1

PMB-562LF
Mini-ITX Motherboard
With VGA /Sound/2LAN

OPERATION MANUAL

COPYRIGHT NOTICE

This operation manual is meant to assist both Embedded Computer manufacturers and end users in installing and setting up the system. The information contained in this document is subject to change without any notice.

This manual is copyrighted in April, 2006. You may not reproduce or transmit in any form or by any means, electronic, or mechanical, including photocopying and recording.

ACKNOWLEDGEMENTS

All trademarks and registered trademarks mentioned herein are the property of their respective owners.

CE NOTICE

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void your authority to operate such equipment.

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION

| | | |
|-----|--|-----|
| 1-1 | About This Manual | 1-2 |
| 1-2 | System Specification | 1-3 |
| 1-3 | Extra Industrial Application Features..... | 1-6 |
| 1-4 | Safety Precautions | 1-6 |

CHAPTER 2 HARDWARE CONFIGURATION

| | | |
|------|--|------|
| 2-1 | Jumper & Connector Quick Reference Table | 2-2 |
| 2-2 | Component Locations | 2-3 |
| 2-3 | How to Set the Jumpers | 2-4 |
| 2-4 | COM Port Connector | 2-6 |
| 2-5 | COM4 RI/ Voltage Selection | 2-8 |
| 2-6 | RS232/422/485(COM2) Selection | 2-9 |
| 2-7 | RS232/422/485(COM3) Selection | 2-10 |
| 2-8 | Keyboard or PS/2 Mouse Connector | 2-11 |
| 2-9 | Reset Connector | 2-11 |
| 2-10 | Hard Disk Drive LED Connector | 2-11 |
| 2-11 | Power Button | 2-12 |
| 2-12 | External Speaker Connector | 2-12 |
| 2-13 | Power LED Connector | 2-12 |
| 2-14 | External SMI Connector | 2-13 |
| 2-15 | Inverter Connector | 2-13 |
| 2-16 | Clear CMOS Data Selection | 2-14 |
| 2-17 | CPU Fan Connector | 2-14 |
| 2-18 | VGA Connector | 2-15 |
| 2-19 | Hard Disk Drive Connector | 2-16 |
| 2-20 | Floppy Disk Drive Connector | 2-18 |
| 2-21 | Printer Connector | 2-19 |
| 2-22 | Universal Serial Bus Connector | 2-20 |
| 2-23 | IRDA Connector | 2-21 |
| 2-24 | LAN Connector | 2-21 |
| 2-25 | USB & LAN Connector | 2-22 |
| 2-26 | Wake-On-LAN Connector | 2-23 |

| | | |
|------|------------------------------------|------|
| 2-27 | LVDS Connector | 2-24 |
| 2-28 | LVDS Panel Voltage Selection | 2-25 |
| 2-29 | ATX Power Connector | 2-26 |
| 2-30 | Sound Connector | 2-27 |
| 2-31 | CD Audio-In Connector | 2-28 |
| 2-32 | Speaker Connector | 2-28 |
| 2-33 | Memory Installation | 2-28 |
| 2-34 | PCI/Riser Card Selection | 2-29 |
| 2-35 | Reset / NMI Selection..... | 2-30 |
| 2-36 | CF Master/Slave Selection | 2-31 |
| 2-37 | PCI Slot Signal Explanation | 2-32 |
| 2-38 | PCI Riser Board Information | 2-33 |
| 2-39 | Digital I/O Port | 2-33 |

CHAPTER 3 SOFTWARE UTILITIES

| | | |
|-----|---|------|
| 3-1 | Introduction | 3-2 |
| 3-2 | VGA Driver Utility | 3-2 |
| 3-3 | Flash BIOS Update | 3-4 |
| 3-4 | LAN Driver Utility | 3-6 |
| 3-5 | Sound Driver Utility | 3-7 |
| 3-6 | Intel Chipset Software Installation Utility | 3-8 |
| 3-7 | USB2.0 Software Installation Utility | 3-9 |
| 3-8 | Watchdog Configuration | 3-10 |

CHAPTER 4 AWARD BIOS SETUP

| | | |
|------|----------------------------------|------|
| 4-1 | Introduction | 4-2 |
| 4-2 | Entering Setup | 4-3 |
| 4-3 | The Standard CMOS Features | 4-4 |
| 4-4 | The Advanced BIOS Features | 4-7 |
| 4-5 | Advanced Chipset Features | 4-9 |
| 4-6 | Integrated Peripherals | 4-12 |
| 4-7 | Power Management Setup | 4-17 |
| 4-8 | PNP/PCI Configuration | 4-19 |
| 4-9 | PC Health Status | 4-21 |
| 4-10 | Frequency Control | 4-22 |

| | | |
|------|-------------------------------|------|
| 4-11 | Load Fail-Safe Defaults | 4-23 |
| 4-12 | Load Optimized Defaults | 4-23 |
| 4-13 | Set Supervisor Password | 4-24 |
| 4-14 | Save & Exit Setup | 4-25 |
| 4-15 | Exit Without Saving | 4-26 |

APPENDIX A EXPANSION BUS

| | |
|---|-----|
| PCI Bus Pin Assignment | A-2 |
| Mini-PCI Bus Connector Pin Assignment | A-3 |
| Compact Flash Card Connector Pin Assignment | A-4 |

APPENDIX B TECHNICAL SUMMARY

| | |
|--------------------------------|-----|
| Block Diagram | B-2 |
| Interrupt Map | B-3 |
| RTC & CMOS RAM Map | B-4 |
| Timer & DMA Channels Map | B-5 |
| I/O & Memory Map | B-6 |

INTRODUCTION

CHAPTER

1

This chapter gives you the information for PMB-562LF. It also outlines the System specifications.

Section includes:

- About This Manual
- System Specifications
- Extra Industrial Application Features
- Safety Precautions

Experienced users can skip to chapter 2 on page 2-1 for a Quick Start.

1-1. ABOUT THIS MANUAL

Thank you for purchasing our PMB-562LF Intel® processor Mini-ITX Mainboard enhanced with VGA/Sound/2LAN, which is fully PC / AT compatible. The PMB-562LF provides faster processing speed, greater expandability and can handle more tasks than before. This manual is designed to assist you how to install and set up the system. It contains four chapters. The user can apply this manual for configuration according to the following chapters:

Chapter 1 Introduction

This chapter introduces you to the background of this manual, and the specifications for this system. The final page of this chapter will indicate how to avoid damaging this board.

Chapter 2 Hardware Configuration

This chapter outlines the component locations and their functions. In the end of this chapter, you will learn how to set jumper and how to configure this card to meet your own needs.

Chapter 3 Software Utilities

This chapter contains helpful information for proper installations of the VGA utility, LAN utility, Sound utility, and Flash BIOS Update. It also describes the Watchdog-timer configuration.

Chapter 4 Award BIOS Setup

This chapter indicates you how to set up the BIOS configurations.

Appendix A Expansion Bus

This Appendix introduces you the expansion bus for Mini-PCI BUS, and PCI BUS.

Appendix B Technical Summary

This section gives you the information about the Technical maps.

1-2. SYSTEM SPECIFICATIONS

- **CPU (mPGA479):**

Intel® ULV Celeron® M 1GHz / Intel® Pentium® M LV 1.4GHz
Auto detect voltage regulator.

- **MEMORY :**

Supports up to 1GB DDR SDRAM.
One 200-pin DDR SO-DIMM sockets on board.

- **CACHE :**

Built-in CPU

- **REAL-TIME CLOCK :**

256-byte battery backed CMOS RAM.
Hardware implementation to indicate century rollover.

- **BIOS :**

Phoenix-AwardBIOS™ for plug & play function.
4Mb with VGA BIOS.
Easy update 512KB flash EEPROM.
Support S/IO Setup.

- **KEYBOARD CONNECTOR :**

Mini DIN connector.
Supports for AT/PS2 keyboard.

- **MOUSE CONNECTOR :**

Mini DIN connector.
Supports for PS/2 Mouse.

- **BUS SUPPORT :**

One PCI- Slot
One Mini-PCI Slots
One Compact Flash Bus (for secondary IDE-based)

● **DISPLAY :**

Integrated Graphic in Intel® 855GME
Support D-Sub 15 pin VGA connector
Support 18/24bit LVDS connector
Support 3.3V/5V LVDS Panel Power selection
Support 12V Panel Backlight

*24bit hardware is ready but Intel does not recommend using.

● **IDE INTERFACE :**

Two IDE ports support up to four IED devices.
Supports Ultra DMA 33/66/100.
Compact Flash is connected at secondary IDE Bus.
Compact Flash Master/Slave Mode Selectable.

● **FLOPPY DISK DRIVER INTERFACE :**

Support Floppy Disk Drives 3.5".

● **USB CONNECTOR :**

Support up to six USB 2.0 ports.

● **LAN ADAPTER :**

Dual ports, Realtek RTL8100C (10/100 Mbps) with Pentium® M 1.4GHz CPU.
Single port, Realtek RTL8100C (10/100 Mbps) with Celeron® M 1GHz CPU.
Support wake-on-LAN function.

● **SERIAL PORT :**

Four high speed 16550 Compatible UARTs with Send / Receive 16 Byte FIFOs; COM1:RS-232; COM2/3: RS-232/422/485; COM4: RS-232 with +12V/+5V
MIDI Compatible
Programmable Baud Rate Generator

● **SOUND :**

Realtek ALC655 (AC'97 Codec).
Fully Compliant AC'97 Analog I/O Component
16-Bit Stereo Full-Duplex Codec
Four Analog Line-level Stereo Inputs for Connection.
High Quality CD Input with Ground Sense
Stereo Line-Level Output
Interface: Line-In, Line-Out, Microphone, SPDIF, and CD Audio-In.

● **PCI :**

Expandable up to 3 PCI slot by install a PCI riser card.

● **HARDWARE MONITORING FUNCTION :**

Monitor Voltage, CPU temperature, & Cooling fan.
If CPU Temperature is over setting, the buzzer will send out a warning (only under DOS system).

● **IRDA PORT :**

5-pin Infrared port, support IrDA v1.0 SIR protocol

● **PARALLEL PORT :**

SPP / ECP / EPP Function.
1 port, bi-directional parallel port.

● **LED INDICATOR :**

System power
Hard Disk access
LAN LED indicator

● **OPERATING TEMPERATURE :**

0 to 60°C.

● **BOARD DIMENSIONS :**

170mm x 170 mm, 6.7" x 6.7"

● **BOARD NET WEIGHT :**

460 gram.

1-3. EXTRA INDUSTRIAL APPLICATION FEATURES

- **DIGITAL I/O PORT :**

- 4 bit input and 4 bit output digital port availability.
 - Decoding Address at I/O 440H and 441H.
 - General purpose and Input/Output buffer embedded.

- **WATCHDOG TIMER :**

- Watchdog Timer controllable by software, customer application 1~255 second watchdog timer time-out value
 - Reset upon Mouse/Keyboard, SMI or System Reset.

1-4. SAFETY PRECAUTIONS

Follow the messages below to avoid your systems from damage:

1. Keep your system away from static electricity on all occasions.
2. Prevent electric shock. Don't touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.
3. Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

HARDWARE CONFIGURATION

CHAPTER

2

***** QUICK START *****

Helpful information describes the jumper & connector settings, and component locations.

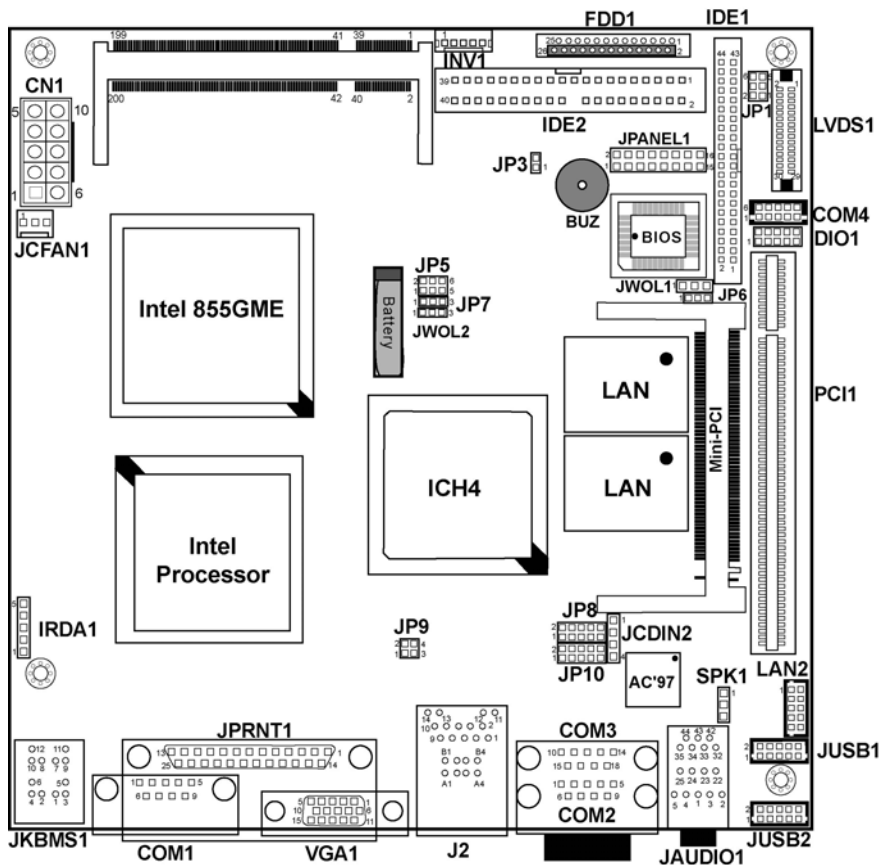
Section includes:

- Jumper & Connector Quick Reference Table
- Component Locations
- Configuration and Jumper settings
- Connector's Pin Assignments

2-1. JUMPER & CONNECTOR QUICK REFERENCE TABLE

| | |
|--------------------------------------|--------------------------|
| COM Port Connector | COM1, COM2 COM3, COM4 |
| COM4 Port RI/Voltage Selection | JP1 |
| RS232/422/485 (COM2) Selection | JP10 |
| RS232/422/485 (COM3) Selection | JP8 |
| Keyboard/Mouse Connector | JBMS1 |
| Reset Connector | JPANEL1 (13,15) |
| Hard Disk Drive LED Connector | JPANEL1 (9,11) |
| Power Button | JPANEL1 (14,16) |
| External Speaker Connector | JPANEL1 (1,3,5,7) |
| Power LED Connector | JPANEL1 (8,10,12) |
| External SMI Connector | JPANEL1 (2, 4) |
| Inverter Connector | INV1 |
| Clear CMOS Data Selection | JP7 |
| CPU Fan Connector | JCFAN1 |
| VGA Connector | VGA1 |
| Hard Disk Drive Connector | IDE1, IDE2 |
| Floppy Disk Drive Connector | FDD1 |
| Printer Connector | JPRNT1 |
| Universal Serial Bus Connector | JUSB1, JUSB2 |
| IrDA Connector | IRDA1 |
| USB&LAN Connector | J2 |
| LAN Connector | LAN2 |
| Wake-on-LAN Connector | JWOL1, JWOL2 |
| LVDS Connector | LVDS1 |
| LVDS Voltage Selection | JP5 |
| Power Connector | CN1 |
| Sound Connector | JAUDIO1 |
| CD Audio-In Connector | JCDIN2 |
| Speaker Connector | SPK1 |
| Memory Installation | SO-DIMM1 |
| PCI/Riser Card Selection | JP6 |
| Reset/NMI Selection | JP9 |
| CF Master/Slave Selection | JP3 |
| PCI Slot Signal Explanation | |
| PCI Riser Board Information | |
| Digital I/O Port | DIO1 |

2-2. COMPONENT LOCATIONS



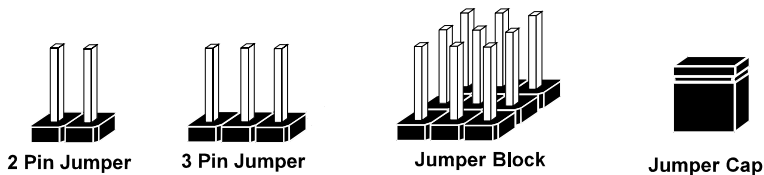
PMB-562LF Connector, Jumper and Component locations

2-3. HOW TO SET THE JUMPERS

You can configure your board by setting jumpers. Jumper is consists of two or three metal pins with a plastic base mounted on the card, and by using a small plastic "cap", Also known as the jumper cap (with a metal contact inside), you are able to connect the pins. So you can set-up your hardware configuration by "open" or "close" pins.

The jumper can be combined into sets that called jumper blocks. When the jumpers are all in the block, you have to put them together to set up the hardware configuration. The figure below shows how this looks like.

JUMPERS AND CAPS

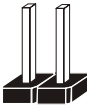


If a jumper has three pins (for examples, labelled PIN1, PIN2, and PIN3), You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagrams look and what they represent.

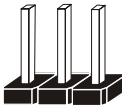
JUMPER DIAGRAMS



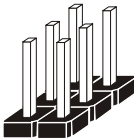
Jumper Cap
looks like this



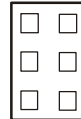
2 pin Jumper
looks like this



3 pin Jumper
looks like this



Jumper Block
looks like this



JUMPER SETTINGS



2 pin Jumper close(enabled)
Looks like this



1



3 pin Jumper
2-3 pin close(enabled)
Looks like this



1



Jumper Block
1-2 pin close(enabled)
Looks like this



1 2

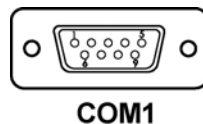
2-4. COM PORT CONNECTOR

COM1 : COM1 Connector

COM1 is fixed as RS-232.

The pin assignment is as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | DCD1 |
| 2 | RX1 |
| 3 | TX1 |
| 4 | DTR1 |
| 5 | GND |
| 6 | DSR1 |
| 7 | RTS1 |
| 8 | CTS1 |
| 9 | RI1 |

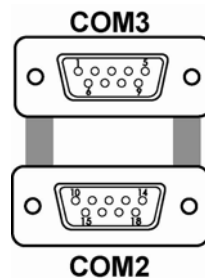


COM2 : COM2 Connector

COM2 is selectable as RS-232/422/485.

The pin assignment is as follows :

| PIN | ASSIGNMENT | | |
|-----|------------|--------|--------|
| | RS-232 | RS-422 | RS-485 |
| 1 | DCD2 | TX- | TX- |
| 2 | RX2 | TX+ | TX+ |
| 3 | TX2 | RX+ | RX+ |
| 4 | DTR2 | RX- | RX- |
| 5 | GND | GND | GND |
| 6 | DSR2 | RTS- | NC |
| 7 | RTS2 | RTS+ | NC |
| 8 | CTS2 | CTS+ | NC |
| 9 | RI2 | CTS- | NC |

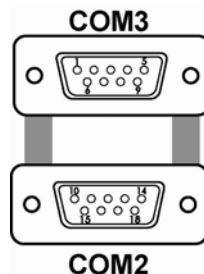


COM3 : COM3 Connector

COM3 is selectable as RS-232/422/485.

The pin assignment is as follows :

| PIN | ASSIGNMENT | | |
|-----|------------|--------|--------|
| | RS-232 | RS-422 | RS-485 |
| 1 | DCD3 | TX- | TX- |
| 2 | RX3 | TX+ | TX+ |
| 3 | TX3 | RX+ | RX+ |
| 4 | DTR3 | RX- | RX- |
| 5 | GND | GND | GND |
| 6 | DSR3 | RTS- | NC |
| 7 | RTS3 | RTS+ | NC |
| 8 | CTS3 | CTS+ | NC |
| 9 | RI3 | CTS- | NC |



COM4 : COM4 Connector

COM4 is fixed as RS-232.

The pin assignment is as follows:

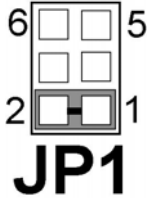
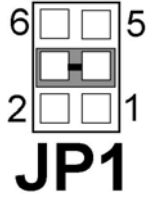
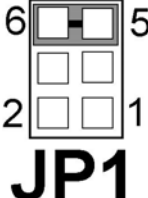
| PIN | ASSIGNMENT |
|-----|------------|
| 1 | DCD4 |
| 2 | RX4 |
| 3 | TX4 |
| 4 | DTR4 |
| 5 | GND |
| 6 | DSR4 |
| 7 | RTS4 |
| 8 | CTS4 |
| 9 | RI4 |
| 10 | NC |




2-5. COM4 PIN 9 RI OR VOLTAGE SELECTION

JP1 : COM4 Pin 9 RI or Voltage Selection

The selections are as follows:

| SELECTION | JUMPER SETTINGS | JUMPER ILLUSTRATION |
|-----------|-----------------|--|
| RI | 1-2 |  |
| +12V | 3-4 |  |
| +5V | 5-6 |  |

***Manufacturing Default – RI.

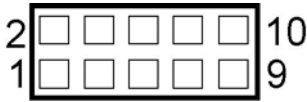
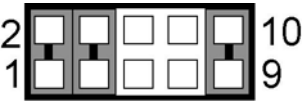
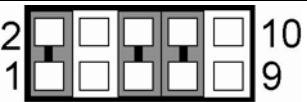
 If COM4's Pin 9 is selectable to voltage mode, only 0.5Amp power consumption is allowed for connected to COM device.

2-6. RS232/422/485 (COM2) SELECTION

JP10 : RS-232/422/485 (COM2) Selection

This connector is used to set the COM2 function.

The jumper settings are as follows :

| COM 2 Function | Jumper Settings (pin closed) | Jumper Illustrations |
|-------------------|---------------------------------|---|
| RS-232 | Open |  JP10 |
| RS-422 | 1-2, 3-4, 9-10 |  JP10 |
| RS-485 | 1-2, 5-6, 7-8 |  JP10 |

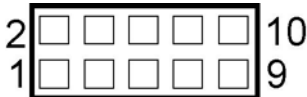
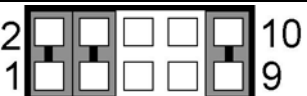
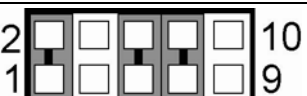
*** Manufactory default --- RS-232.

2-7. RS232/422/485 (COM3) SELECTION

JP8 : RS-232/422/485 (COM3) Selection

This connector is used to set the COM3 function.

The jumper settings are as follows :

| COM 3 Function | Jumper Settings (pin closed) | Jumper Illustrations |
|-------------------|---------------------------------|--|
| RS-232 | Open |  JP8 |
| RS-422 | 1-2, 3-4, 9-10 |  JP8 |
| RS-485 | 1-2, 5-6, 7-8 |  JP8 |

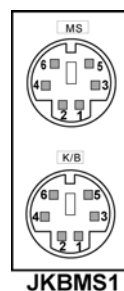
*** Manufactory default --- RS-232.

2-8. KEYBOARD AND PS/2 MOUSE CONNECTOR

JKBMS1 : Keyboard and PS/2 Mouse Connector

DIN connector can support keyboard, and PS/2 Mouse. The pin assignments are as follows :

| PIN | ASSIGNMENT | |
|-----|------------|------------|
| | Keyboard | PS/2 Mouse |
| 1 | KBDATA | MSDATA |
| 2 | NC | NC |
| 3 | GND | GND |
| 4 | 5VSB | 5VSB |
| 5 | KBCLK | MSCLK |
| 6 | NC | NC |

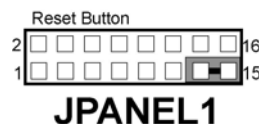


2-9. RESET CONNECTOR

JPANEL1 (13,15) : Reset Connector.

The pin assignment is as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 13 | GND |
| 15 | RST_SW |

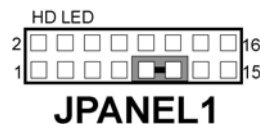


2-10. HARD DISK DRIVE LED CONNECTOR

JPANEL1 (9,11) : Hard Disk Drive LED Connector

The pin assignment is as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 9 | HD_LED+ |
| 11 | HD_LED- |

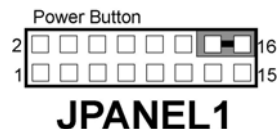


2-11. POWER BUTTON

JANEL1 (14,16) : Power Button

The pin assignment is as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 14 | PWR_BN1 |
| 16 | PWR_BN2 |

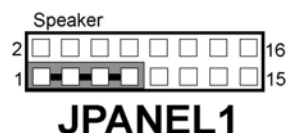


2-12. EXTERNAL SPEAKER CONNECTOR

JANEL1 (1,3,5,7) : External Speaker Connector

The pin assignment is as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | SPK- |
| 3 | NC |
| 5 | NC |
| 7 | SPK+ |

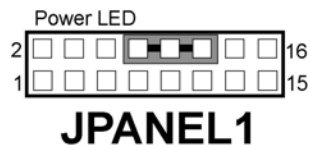


2-13. POWER LED CONNECTOR

JANEL1 (8,10,12) : Power LED Connector

The pin assignment is as follows:

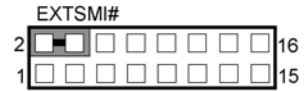
| PIN | ASSIGNMENT |
|-----|------------|
| 8 | PW_LED+ |
| 10 | PW_LED+ |
| 12 | PW_LED- |



2-14. EXTERNAL SMI CONNECTOR

JPANEL1 (2,4) : External SMI Connector
The pin assignment is as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 2 | GPIO12 |
| 4 | GND |



JANEL1

2-15. INVERTER CONNECTOR

INV1 : Inverter Connector
The pin assignment is as follows:

| PIN | ASSIGNMENT |
|-----|---|
| 1 | +12V |
| 2 | GND |
| 3 | VCC |
| 4 | GND |
| 5 | ENABKL (Inverter backlight ON/OFF control signal) |





INV1

2-16. CLEAR CMOS DATA SELECTION

JP7 : Clear CMOS Data Selection

The selections are as follows :

| FUNCTION | JUMPER SETTING (pin closed) | JUMPER ILLUSTRATION |
|------------|--------------------------------|---|
| Normal | 1-2 |  JP7 |
| Clear CMOS | 2-3 |  JP7 |

*** Manufacturing Default is set as Normal.

Note: To clear CMOS data, user must power-off the computer and set the jumper to "Clear CMOS" as illustrated above. After five to six seconds, set the jumper back to "Normal" and power-on the computer.

2-17. CPU FAN CONNECTOR

JCFAN1 : CPU Fan connector

The pin assignment is as follows:

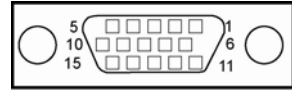
| PIN | ASSIGNMENT |
|-----|------------|
| 1 | GND |
| 2 | +12V |
| 3 | FAN1 |



2-18. VGA CONNECTOR

VGA1 : VGA CRT Connector

The pin assignments are as follows:



VGA1

| PIN | ASSIGNMENT |
|-----|--------------|
| 1 | RED |
| 2 | GREEN |
| 3 | BLUE |
| 4 | NC |
| 5 | GND |
| 6 | GND |
| 7 | GND |
| 8 | GND |
| 9 | VCC |
| 10 | GND |
| 11 | NC |
| 12 | VGA IIC DATA |
| 13 | HSYNC |
| 14 | VSYNC |
| 15 | VGA IIC CLK |

2-19. HARD DISK DRIVE CONNECTOR

IDE1: Hard Disk Drive Connector

The PMB-562LF possesses two HDD connectors, IDE1 and IDE2. The pin assignments are as follows:

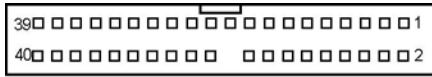
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | IDERST | 2 | GND |
| 3 | PDD7 | 4 | PDD8 |
| 5 | PDD6 | 6 | PDD9 |
| 7 | PDD5 | 8 | PDD10 |
| 9 | PDD4 | 10 | PDD11 |
| 11 | PDD3 | 12 | PDD12 |
| 13 | PDD2 | 14 | PDD13 |
| 15 | PDD1 | 16 | PDD14 |
| 17 | PDD0 | 18 | PDD15 |
| 19 | GND | 20 | NC |
| 21 | PDREQ | 22 | GND |
| 23 | PDLOW# | 24 | GND |
| 25 | PDHOLD# | 26 | GND |
| 27 | PIORDY | 28 | PULL LOW |
| 29 | PDDACK# | 30 | GND |
| 31 | IRQ14 | 32 | NC |
| 33 | PDA1 | 34 | P66 DETECT |
| 35 | PDA0 | 36 | PDA2 |
| 37 | PDCS#1 | 38 | PDCS#3 |
| 39 | IDEACTP# | 40 | GND |
| 41 | VCC | 42 | VCC |
| 43 | GND | 44 | GND |



IDE1

IDE2: Hard Disk Drive Connector

The pin assignments are as follows:



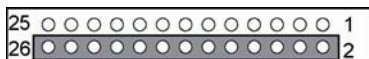
IDE2

| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | IDERST | 2 | GND |
| 3 | SDD7 | 4 | SDD8 |
| 5 | SDD6 | 6 | SDD9 |
| 7 | SDD5 | 8 | SDD10 |
| 9 | SDD4 | 10 | SDD11 |
| 11 | SDD3 | 12 | SDD12 |
| 13 | SDD2 | 14 | SDD13 |
| 15 | SDD1 | 16 | SDD14 |
| 17 | SDD0 | 18 | SDD15 |
| 19 | GND | 20 | NC |
| 21 | SDREQ | 22 | GND |
| 23 | SDIOW# | 24 | GND |
| 25 | SDIOR# | 26 | GND |
| 27 | SIORDY | 28 | PULL LOW |
| 29 | SDDACK# | 30 | GND |
| 31 | IRQ15 | 32 | NC |
| 33 | SDA1 | 34 | S66 DETECT |
| 35 | SDA0 | 36 | SDA2 |
| 37 | SDCS#1 | 38 | SDCS#3 |
| 39 | IDEACTS# | 40 | GND |

2-20. FLOPPY DISK DRIVE CONNECTOR

FDD1 : Floppy Disk Drive Connector

The pin assignments are as follows :



FDD1

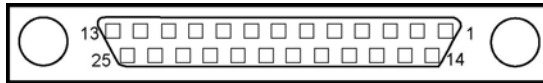
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | VCC | 2 | INDEXJ |
| 3 | VCC | 4 | DSAJ |
| 5 | VCC | 6 | DSKCHGJ |
| 7 | NC | 8 | NC |
| 9 | NC | 10 | MOAJ |
| 11 | NC | 12 | DIRJ |
| 13 | DRV DEN0 | 14 | STEPJ |
| 15 | GND | 16 | WDATAJ |
| 17 | GND | 18 | WGATEJ |
| 19 | GND | 20 | TRACK0J |
| 21 | GND | 22 | WPTJ |
| 23 | GND | 24 | RDATAJ |
| 25 | GND | 26 | HEADJ |

2-21. PRINTER CONNECTOR

JPRNT1 : Printer Connector

As to link the Printer to the card, you need a cable to connect both DB25 connector and parallel port.

The pin assignments are as follows :



JPRNT1

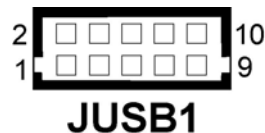
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | STB | 14 | AFD# |
| 2 | PDR0 | 15 | ERROR# |
| 3 | PDR1 | 16 | PAR_INIT# |
| 4 | PDR2 | 17 | SLIN# |
| 5 | PDR3 | 18 | GND |
| 6 | PDR4 | 19 | GND |
| 7 | PDR5 | 20 | GND |
| 8 | PDR6 | 21 | GND |
| 9 | PDR7 | 22 | GND |
| 10 | ACK# | 23 | GND |
| 11 | BUSY | 24 | GND |
| 12 | PE | 25 | GND |
| 13 | SLCT | | |

2-22. UNIVERSAL SERIAL BUS CONNECTOR

JUSB1: Universal Serial Bus Connector

The pin assignments are as follows:

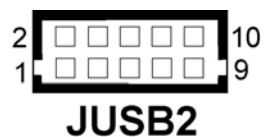
| PIN | ASSIGNMENT |
|-----|------------|
| 1 | VCCUSB2 |
| 2 | VCCUSB2 |
| 3 | USB2N_R |
| 4 | USB3N_R |
| 5 | USB2P_R |
| 6 | USB3P_R |
| 7 | GND |
| 8 | GND |
| 9 | GND |
| 10 | GND |



JUSB2: Universal Serial Bus Connector

The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | VCCUSB3 |
| 2 | VCCUSB3 |
| 3 | USB4N_R |
| 4 | USB5N_R |
| 5 | USB4P_R |
| 6 | USB5P_R |
| 7 | GND |
| 8 | GND |
| 9 | GND |
| 10 | GND |

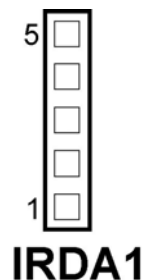


2-23. IRDA CONNECTOR

IRDA1: IrDA (Infrared) Connector

The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | +5V |
| 2 | NC |
| 3 | IRRXX |
| 4 | GND |
| 5 | IRTX |

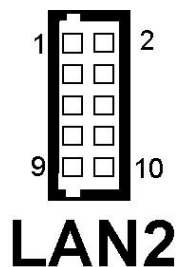


2-24. LAN CONNECTOR

LAN2: LAN Connector

The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|----------------|
| 1 | LAN2_TXP_R |
| 2 | 2VDD33 |
| 3 | LAN2_TXN_R |
| 4 | LAN2_ACT_R |
| 5 | GND |
| 6 | LAN2_LINK100_R |
| 7 | LAN2_RXP_R |
| 8 | LAN2_LINK10_R |
| 9 | LAN2_RXN_R |
| 10 | NC |



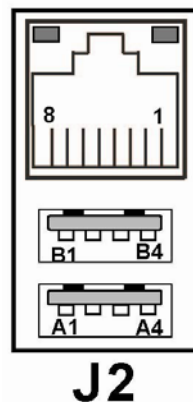
2-25. USB&LAN CONNECTOR

J2: USB & LAN Connector (10/100 LAN)

The pin assignments are as follows:

LAN:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | MDI_0P |
| 2 | MDI_0N |
| 3 | MDI_1P |
| 4 | MDI_1N |
| 5 | MDI_2P |
| 6 | MDI_2N |
| 7 | MDI_3P |
| 8 | MDI_3N |



LAN LED Indicator:

Left side LED:

| | |
|-----------------|-----------------------------|
| Green Color on | 10/100 LAN Speed Indicator |
| Orange Color on | Giga LAN Speed Indicator |
| off | No LAN switch/hub connected |

Right side LED:

| | |
|-----------------------|-----------------------|
| Yellow Color Blinking | LAN Message Active |
| off | No LAN Message Active |

USB:

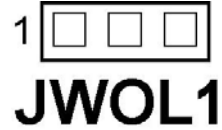
| PIN | ASSIGNMENT |
|-----|------------|
| A1 | VCCUSB1 |
| A2 | USB1N_R |
| A3 | USB1P_R |
| A4 | GND |
| B1 | VCCUSB0 |
| B2 | USB0N_R |
| B3 | USB0P_R |
| B4 | GND |

2-26. WAKE-ON-LAN CONNECTOR

JWOL1: Wake-On-LAN Connector

The pin assignments are as follows:

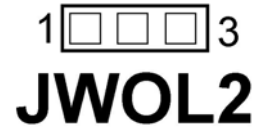
| PIN | ASSIGNMENT |
|-----|------------|
| 1 | 5VSB |
| 2 | GND |
| 3 | LWAKE |



JWOL2: Wake-On-LAN Connector

The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | 5VSB |
| 2 | GND |
| 3 | PMEJ |

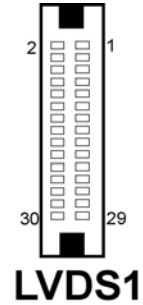


2-27. LVDS CONNECTOR

LVDS1 : LVDS Connector.

The pin assignments are as follows:

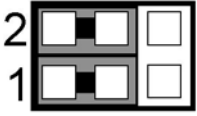
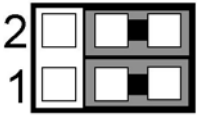
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | LCD_VCC | 2 | GND |
| 3 | ZCM | 4 | ZCP |
| 5 | GND | 6 | Z2M |
| 7 | Z2P | 8 | GND |
| 9 | Z1M | 10 | Z1P |
| 11 | Z3P | 12 | Z3M |
| 13 | Z0P | 14 | Z0M |
| 15 | GND | 16 | YCP |
| 17 | YCM | 18 | GND |
| 19 | Y2P | 20 | Y2M |
| 21 | GND | 22 | Y1P |
| 23 | Y1M | 24 | GND |
| 25 | Y0P | 26 | Y0M |
| 27 | Y3P | 28 | Y3M |
| 29 | LCD_VCC | 30 | LCD_VCC |



2-28. LVDS PANEL VOLTAGE SELECTION

JP5 : LVDS Panel Voltage Selection.

The selections are as follows:

| SELECTION | JUMPER SETTING | JUMPER ILLUSTRATION |
|-----------|----------------|---|
| LVDS_VCC3 | 1-3 2-4 |  <p>JP5</p> |
| LVDS_VCC5 | 3-5 4-6 |  <p>JP5</p> |

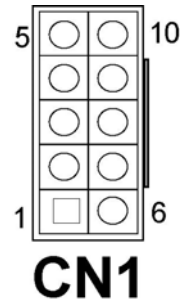
** Manufacturing Default: LVDS_VCC3**

2-29. ATX POWER CONNECTOR

CN1 : ATX Power Connector

The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | VCC |
| 2 | VCC |
| 3 | GND |
| 4 | GND |
| 5 | +12V |
| 6 | 5VSB |
| 7 | VCC |
| 8 | GND |
| 9 | PS-ON |
| 10 | -12V |



2-30. SOUND CONNECTOR

JAUDIO1 : Sound Connector, including Line-In, Line-Out & Mic.
Also can support only MIC connector. The pin assignments are as follows :

SPDIF (inside the Line-In hole)

| PIN | ASSIGNMENT |
|-----|------------|
| # | Photo type |

Line-In: light blue color

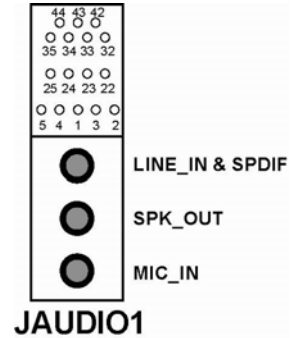
| PIN | ASSIGNMENT |
|-----|------------|
| 1 | GND |
| 2 | LINE_L |
| 3 | LINE_R |

SPK-Out: light green color

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | GND |
| 2 | SPK_L |
| 3 | SPK_R |

Mic-In: pink color

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | GND |
| 2 | MIC_IN1 |
| 3 | MIC_IN2 |



JAUDIO1

2-31. CD AUDIO-IN CONNECTOR

JCDIN2 : CD Audio-In Connector

The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | CD L |
| 2 | CDGND |
| 3 | CDGND |
| 4 | CD R |



2-32. SPEAKER CONNECTOR

SPK1 : Speaker Connector

The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | SPK_L |
| 2 | GND |
| 3 | SPK_R |



2-33. MEMORY INSTALLATION

PMB-562LF CPU Card can support up to 1GB in one SODIMM sockets.



DRAM BANK CONFIGURATION

| SO-DIMM | TOTAL MEMORY |
|---------|--------------|
| 128MB | 128MB |
| 256MB | 256MB |
| 512MB | 512MB |
| 1GB | 1GB |

2-34. PCI SLOT PIN 26 SELECTION

JP6 : PCI/Riser Card Selection.

The selections are as follows:

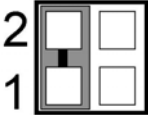
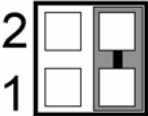
| SELECTION | JUMPER SETTING | JUMPER ILLUSTRATION |
|-------------------------|----------------|--|
| PCI (IDSEL) | 1-2 |  JP6 |
| Riser Card (P_GNT#5) | 2-3 |  JP6 |

** Manufacturing Default: Riser Card**

2-35. RESET/ NMI SELECTION

JP9 : Reset/NMI Selection.

The selections are as follows:



| SELECTION | JUMPER SETTING | JUMPER ILLUSTRATION |
|-----------|----------------|---|
| Reset | 1-2 |  JP9 |
| NMI | 3-4 |  JP9 |

** Manufacturing Default: Reset**

2-36. CF MASTER/ SLAVE SELECTION

JP3 : CF Master/ Slave Selection.

The selections are as follows:

| SELECTION | JUMPER SETTING | JUMPER ILLUSTRATION |
|-----------|----------------|--|
| Master | 1-2 |  |
| Slave | Open |  |

** Manufacturing Default: Master**

2-37. PCI SLOT SIGNAL EXPLANATION

In order to support standard PCI and PCI riser board for up to 3 PCI devices, the PCI slot signals in this mainboard are listed below:

| PIN | Standard | Riser |
|------------|-----------------|--------------|
| A1 | TRST# | SERIRQ |
| A9 | RSVD | CLKC |
| A11 | RSVD | CLKD |
| A14 | RSV->3VSB | GNT1# |
| A19 | PME# | REQ2# |
| A26 | IDSEL | GNT2# |
| A40 | SMBCLK | REQA# |
| A41 | SMBDATA | GNTA# |
| B2 | TCK | ISA_CLK |
| B9 | PRSNT1# | REQ3# |
| B10 | RSVD | REQ1# |
| B11 | PRSNT2# | GNT3# |
| B14 | RSVD | CLKA |
| B16 | CLK | CLKB |

2-38. PCI RISER BOARD INFORMATION

For correctly operation for 3 PCI devices on the PCI slot of PMB-562LF, the particular PCI riser card must be followed to the following recommendation. Professional technical consultant may need for designing the right riser board or purchasing from the same manufactories' riser board.

PCI Routing Table

| IDSEL | INTJ0 | INTJ1 | INTJ2 | INTJ3 | REQ# | GNT# | CLK |
|-------|-------|-------|-------|-------|---------|---------|----------|
| AD28 | A | B | C | D | P_REQJ3 | P_GNTJ3 | PCI_CLK3 |
| AD29 | B | C | D | A | P_REQJ4 | P_GNTJ4 | PCI_CLK4 |
| AD30 | C | D | A | B | P_REQJ5 | P_GNTJ5 | PCI_CLK5 |

2-39. DIGITAL I/O PORT

DIO1 : Digital Input/Output Port

The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|--------------|
| 1 | VCC |
| 2 | GND |
| 3 | Input bit 0 |
| 4 | Output bit 0 |
| 5 | Input bit 1 |
| 6 | Output bit 1 |
| 7 | Input bit 2 |
| 8 | Output bit 2 |
| 9 | Input bit 3 |
| 10 | Output bit 3 |



Input Port: Read I/O 440H

Output Port: Write I/O 441H

SOFTWARE UTILITIES

CHAPTER

3

This chapter comprises the detailed information of VGA driver, LAN driver, and Flash BIOS update. It also describes how to install the watchdog timer configuration.

Section includes:

- VGA Driver Utility
- Flash BIOS Update
- LAN Driver Utility
- Sound Driver Utility
- Intel® Chipset Software Installation Utility
- USB2.0 Chipset Software Installation Utility
- Watchdog Configuration

3-1. INTRODUCTION

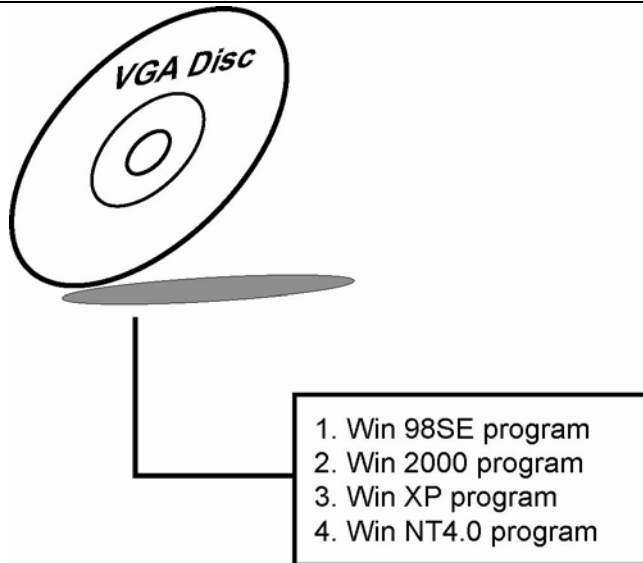
Enclosed with our PMB-562LF package is our driver utility, which may comes in a form of a CD ROM disc or floppy diskettes. For CD ROM disc user, you will only need some of the files contained in the CD ROM disc, please kindly refer to the following chart:

| Filename (Assume that CD ROM drive is D:) | Purpose |
|--|--|
| D:\Driver\VGA | Intel 855GME For VGA driver installation |
| D:\Driver\FLASH | For BIOS update utility |
| D:\Driver\LAN | For LAN Driver installation |
| D:\Driver\Sound | Realtek ALC202A AC97 For Sound driver installation |
| D:\Driver\UTILITY | Intel® Chipset Software Installation Utility For Win 2000, XP |
| D:\Driver\USB 2.0 | USB 2.0 Software Installation Utility For Win 98SE, 2000, ME, XP |

⚠ User should remember to install the Utility right after the OS fully installed.

3-2. VGA DRIVER UTILITY

The VGA interface embedded with our PMB-562LF can support a wide range of display. You can display CRT, LVDS simultaneously with the same mode.



3-2-1. Installation of VGA Driver:

To install the VGA Driver, simply follow the following steps:

1. Place insert the Utility Disk into Floppy Disk Drive A/B or CD ROM drive.
2. Under Windows 98SE/NT4.0/2000/XP system, go to the directory where VGA driver is located.
3. Click **Setup.exe** file for VGA driver installation.
4. Follow the instructions on the screen to complete the installation.
5. Once installation is completed, shut down the system and restart in order for the changes to take effect.

⚠ Under the Windows 98 system, after reboot computer, there will have two error messages appear, "Can't find ikch8xx.cat and isb8xx.cat", just skip the messages, they will not cause any effects.

3-3. FLASH BIOS UPDATE

3-3-1. System BIOS Update:

Users of PMB-562LF can use the program “Awdflash.exe” contained in the Utility Disk for system BIOS and VGA BIOS update.

3-3-2. To update VGA BIOS for LCD Flat Panel Display:

As PMB-562LF user, you have to update the VGA BIOS for your specific LCD flat panel you are going to use. For doing this, you need two files. One is the “Awdflash.exe” file and the other is the VGA BIOS for ATI Rage Mobility M6 file for LCD panel display. Both file must be provided by the vendor or manufacturer. When you get these two files ready, follow the following steps for updating your VGA BIOS:

1. Install “Awdflash.exe” from Utility Disk to Drive C.
2. Insert the VGA BIOS file you have obtained from the vendor.
Type the path to Awdflash.exe and execute the VGA BIOS update with file B562xxxx.bin
3. C:\UTIL\AWDFLASH>AWDFLASH B562xxxx.bin
4. The screen will display as the table found on the next page:

| |
|--|
| FLASH MEMORY WRITER v8.XX (C) Award Software 2001 All Rights Reserved |
| Flash Type – SST 49LF004A /3.3V File Name to Program: B562xxxx.bin Checksum: XXXXX |
| Error Message: Do You Want To Save BIOS (Y/N) |

If you want to save up the original BIOS, enter "Y" and press < Enter >. If you choose "N", the following table will appear on screen.

| |
|--|
| FLASH MEMORY WRITER v8.XX (C) Award Software 2001 All Rights Reserved |
| Flash Type – SST 49LF004A /3.3V File Name to Program: B562xxxx.bin Checksum: XXXXX |
| Error Message : Are You Sure To Program (Y/N) |

Select "Y", and the BIOS will be renewed. When you are refreshing the BIOS, do not turn off or reset the system, or you will damage the BIOS. After you have completed all the programming, the screen displays the table below:

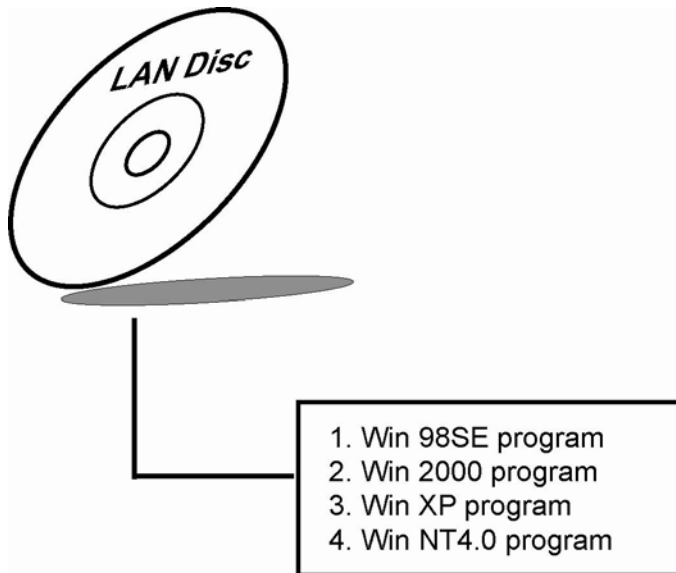
| |
|--|
| FLASH MEMORY WRITER v8.XX (C) Award Software 2001 All Rights Reserved |
| Flash Type – SST 49LF004A /3.3V File Name to Program: B562xxxx.bin Checksum: XXXXX Reset System or Power off to accomplish update process! |
| F1: Reset F10: Exit |

Please reset or power off the system, and then the Flash BIOS is fully implemented.

3-4. LAN DRIVER UTILITY

3-4-1. Introduction

PMB-562LF is enhanced with LAN function that can support various network adapters. Installation programs for LAN drivers are listed as follows:

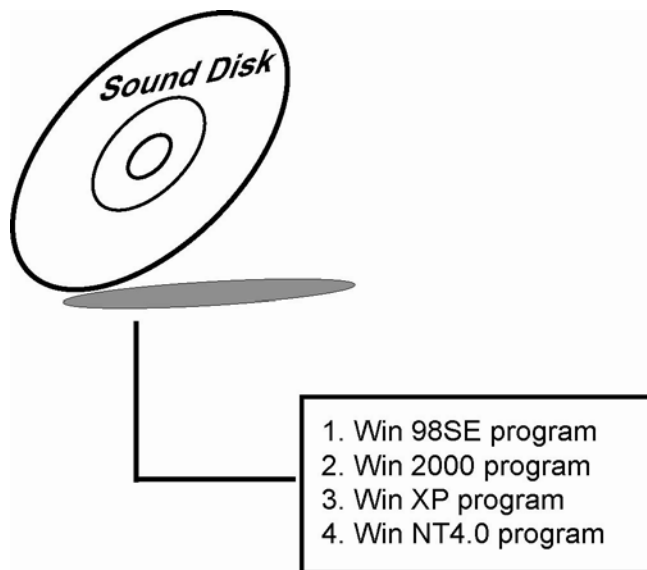


For more details on Installation procedure, please refer to Readme.txt file found on LAN DRIVER UTILITY.

3-5. SOUND DRIVER UTILITY

3-5-1. Introduction

The Realtek ALC655 sound function enhanced in this system is fully compatible with Windows 98, Windows NT 4.0, Windows 2000, and Windows XP. Below, you will find the content of the Sound driver :



3-5-2. Installation Procedure for Windows 98SE/NT/2000/XP

1. From the task bar, click on Start, and then Run.
2. In the Run dialog box, type D:\Sound\path\setup, where "D:\Sound\pathname" refers to the full path to the source files.
3. Click on the OK button or press the ENTER key.
4. Click on the "Next" and OK prompts as they appear.
5. Reboot the system to complete the driver installation.

3-6. INTEL® CHIPSET SOFTWARE INSTALLATION UTILITY

3-6-1. Introduction

The Intel® Chipset Software Installation Utility installs to the target system the Windows* INF files that outline to the operating system how the chipset components will be configured. This is needed for the proper functioning of the following features:

- Core PCI and ISAPNP Services
- AGP Support
- IDE/ATA33/ATA66/ATA100 Storage Support
- USB Support
- Identification of Intel® Chipset Components in Device Manager

3-6-2. Installation of Utility for Windows 98SE/2000/XP

The Utility Pack is to be installed only for Windows 98SE, Windows 2000 and XP program.

It should be installed right after the OS installation, kindly follow the following steps:

1. Place insert the Utility Disk into Floppy Disk Drive A/B or CD ROM drive.
2. Under Windows 98SE/2000/XP system, go to the directory where Utility Disc is located.
3. Click **Setup.exe** file for utility installation.
4. Follow the instructions on the screen to complete the installation.
5. Once installation is completed, shut down the system and restart in order for the changes to take effect.

3-7. USB2.0 SOFTWARE INSTALLATION UTILITY

3-7-1. Installation of Utility for Windows 98SE/ 2000/XP

Intel USB 2.0 Enhanced Host Controller driver can only be used on Windows 98SE, Windows 2000 and Windows XP on Intel Desktop boards. It should be installed right after the OS installation, kindly follow the following steps:

1. Place insert the Utility Disk into Floppy Disk Drive A/B or CD ROM drive.
2. Under Windows 98SE, 2000, and XP system, go to the directory where Utility Disc is located.
3. Start the “System” wizard in control panel. (Click Start/Settings/Control Panel).
4. Select “Hardware” and click “Device Manager ” button.
5. Double Click “USB Root Hub”.
6. Select “Driver”.
7. Click “Install” to install the driver.
8. Follow the instructions on the screen to complete the installation.
9. Click “Finish” after the driver installation is complete.

3-8. WATCHDOG TIMER CONFIGURATION

The I/O port address of the watchdog timer is 2E(hex) and 2F(hex). 2E (hex) is the address port. 2F(hex) is the data port. User must first assign the address of register by writing address value into address port 2E(hex), then write/read data to/from the assigned register through data port 2F (hex).

Configuration Sequence

To program W83627HF configuration registers, the following configuration sequence must be followed:

- (1) Enter the extended function mode
- (2) Configure the configuration registers
- (3) Exit the extended function mode

(1) Enter the extended function mode

To place the chip into the extended function mode, two successive writes of 0x87 must be applied to Extended Function Enable Registers (EFERs, i.e. 2Eh).

(2) Configure the configuration registers

The chip selects the logical device and activates the desired logical devices through Extended Function Index Register (EFIR) and Extended Function Data Register (EFDR). EFIR is located at the same address as EFER, and EFDR is located at address (EFIR+1).

First, write the Logical Device Number (i.e.,0x07) to the EFIR and then write the number of the desired logical device to the EFDR. Secondly, write the address of the desired configuration register within the logical device to the EFIR and then write (or read) the desired configuration register through EFDR.

(3) Exit the extended function mode

To exit the extended function mode, one write of 0xAA to EFER is required. Once the chip exits the extended function mode.

Example Program

1. Enable watchdog timer and set 30 sec. as timeout interval

```
-----  
Mov dx, 2eh ; Enter to extended function mode  
Mov al, 87h  
Out dx, al  
Out dx, al  
-----
```

```
Mov al, 07h ; Select Logical Device 8 of watchdog timer
Out dx,al
Inc dx
Mov al, 08h
Out dx,al
;-----
Dec dx ; Set second as counting unit
Mov al, 0f5h
Out dx,al
Inc dx
In al,dx
And al,not 08h
Out dx,al
;-----
Dec dx ; Set timeout interval as 30seconds and start counting
Mov al, 0f6h
Out dx,al
Inc dx
Mov al, 30
Out dx,al
;-----
Dec dx ; Exit the extended function mode
Mov al, 0aah
Out dx,al
```


AWARD BIOS SETUP

CHAPTER

4

This chapter shows how to set up the Award BIOS.

Section includes:

- Introduction
- Entering Setup
- The Standard CMOS Features
- The Advanced BIOS Features
- The Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PNP/PCI Configuration
- PC Health Status
- Frequency Control
- Load Fail-Safe Defaults
- Load Optimized Defaults
- Set Supervisor Password
- Set User Password
- Save and Exit Setup
- Exit Without Saving

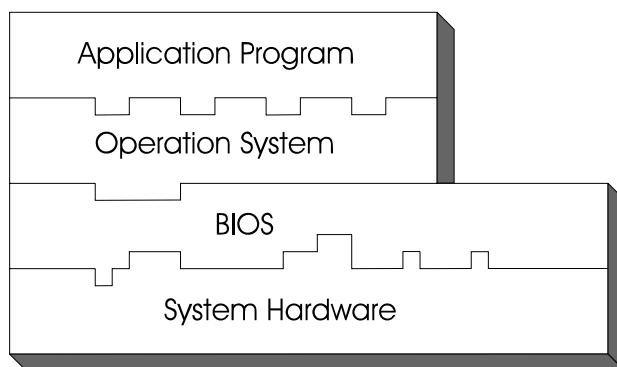
4-1. INTRODUCTION

This chapter will show you the function of the BIOS in managing the features of your system. The PMB-562LF Intel® processor Mini-ITX Motherboard is equipped with the BIOS for system chipset from Award Software Inc. This page briefly explains the function of the BIOS in managing the special features of your system. The following pages describe how to use the BIOS for system chipset Setup menu.

Your application programs (such as word processing, spreadsheets, and games) rely on an operating system such as DOS or OS/2 to manage such things as keyboard, monitor, disk drives, and memory.

The operating system relies on the BIOS (Basic Input and Output system), a program stored on a ROM (Read-only Memory) chip, to initialize and configure your computer's hardware. As the interface between the hardware and the operating system, the BIOS enables you to make basic changes to your system's hardware without having to write a new operating system.

The following diagram illustrates the interlocking relationships between the system hardware, BIOS, operating system, and application program:



4-2. ENTERING SETUP

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines and the following message will appear on the lower screen:

PRESS TO ENTER SETUP, ESC TO SKIP MEMORY TEST

As long as this message is present on the screen you may press the key (the one that shares the decimal point at the bottom of the number keypad) to access the Setup program. In a moment, the main menu of the Award SETUP program will appear on the screen:

Phoenix - AwardBIOS CMOS Setup Utility

| | |
|---|---|
| <ul style="list-style-type: none"> ▶ Standard CMOS Features ▶ Advanced BIOS Features ▶ Advanced Chipset Features ▶ Integrated Peripherals ▶ Power Management Setup ▶ PnP/PCI Configurations ▶ PC Health Status | <ul style="list-style-type: none"> ▶ Frequency Control Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password Save & Exit Setup Exit Without Saving |
| Esc : Quit F10 : Save & Exit Setup | ↑↓→← : Select Item |
| Time, Date, Hard Disk Type | |

Setup program initial screen

You may use the cursor the up/down keys to highlight the individual menu items. As you highlight each item, a brief description of the highlighted selection will appear at the bottom of the screen.

4-3. THE STANDARD CMOS FEATURES

Highlight the "STANDARD CMOS FEATURES" and press the <ENTER> key and the screen will display the following table:

Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features

| | | |
|--|----------------------|--|
| Date (mm:dd:yy) | Tue, Jun 21 2005 | Item Help |
| Time (hh:mm:ss) | 17 : 13 : 13 | |
| ▶ IDE Primary Master | [QSI CD-ROM SCR-242] | Menu Level ▶ Change the internal clock. |
| ▶ IDE Primary Slave | [None] | |
| ▶ IDE Secondary Master | [ST340014A] | |
| ▶ IDE Secondary Slave | [None] | |
| Drive A | [1.44M, 3.5 in.] | |
| Drive B | [None] | |
| Video | [EGA/VGA] | |
| Halt On | [All, But Keyboard] | |
| Base Memory | 640K | |
| Extended Memory | 1013760K | |
| Total Memory | 1014784K | |
| ↑↓→←: Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults | | |

CMOS Setup screen

In the above Setup Menu, use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Date:

< Month >, < Date > and <Year >. Ranges for each value are in the CMOS Setup Screen, and the week-day will skip automatically.

Time:

< Hour >, < Minute >, and < Second >. Use 24 hour clock format, i.e., for PM numbers, add 12 to the hour. For example: 4: 30 P.M. You should enter the time as 16:30:00.

IDE Primary Master / Slave:**IDE Secondary Master / Slave:**

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detect its specifications during POST, every time system boots.

If you do not want to select drive type AUTO, other methods of selecting drive type are available:

1. Match the specifications of your installed IDE hard drive(s) with the preprogrammed values for hard drive types 1 through 45.
2. Select USER and enter values into each drive parameter field.
3. Use the IDE HDD AUTO DETECTION function in Setup.

Here is a brief explanation of drive specifications:

Type: The BIOS contains a table of pre-defined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors. Drives whose specifications do not accommodate any predefined type are classified as type USER.

- Size: Disk drive capacity (approximate). Note that this size is usually greater than the size of a formatted disk given by a disk-checking program.
- Cyls: number of cylinders.
- Head: number of heads.
- Precomp: write precompensation cylinders.
- Landz: landing zone.
- Sector: number of sectors.
- Mode: Auto, Normal, Large or LBA.

Auto: The BIOS automatically determines the optimal mode.

- Normal: Maximum number of cylinders, heads, sectors supported are 1024, 16 and 63.
- Large: For drives that do not support LBA and have more than 1024 cylinders.

- **LBA (Logical Block Addressing):** During drive accesses, the IDE controller transforms the data address described by sector, head and cylinder number into a physical block address, significantly improving data transfer rates. For drives greater than 1024 cylinders.

DRIVE A AND DRIVE B:

Select the type of floppy disk drive installed in your system. The available options are 360KB 5.25in, 1.2KB 5.25in, 720KB 3.5in, 1.44MB 3.5in, 2.88MB 3.5in and None.

VIDEO:

This category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type in Setup. Available Options are as follows:

| | |
|---------|---|
| EGA/VGA | Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters. |
| CGA 40 | Color Graphics Adapter, power up in 40 column mode. |
| CGA 80 | Color Graphics Adapter, power up in 80 column mode. |
| MONO | Monochrome adapter, includes high resolution monochrome adapters. |

HALT ON:

This category allows user to choose whether the computer will stop if an error is detected during power up. Available options are “All errors”, “No errors”, “All, But keyboard”, “All, But Diskette”, and “All But Disk/Key”.

BASE MEMORY:

Displays the amount of conventional memory detected during boot up.

EXTENDED MEMORY:

Displays the amount of extended memory detected during boot up.

TOTAL MEMORY:

Displays the total memory available in the system.

4-4. THE ADVANCED BIOS FEATURES

Choose the “ADVANCED BIOS FEATURES” in the main menu, the screen shown as below.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced BIOS Features

| | | |
|---|-------------|--------------|
| CPU L1 & L2 Cache | [Enabled] | Item Help |
| Quick Power On Self Test | [Enabled] | |
| First Boot Device | [USB-CDROM] | Menu Level ► |
| Second Boot Device | [HDD-0] | |
| Boot Up Floppy Seek | [Enabled] | |
| Boot Up NumLock Status | [On] | |
| Typematic Rate Setting | [Disabled] | |
| x Typematic Rate (Chars/Sec) | 6 | |
| x Typematic Delay (Msec) | 250 | |
| Security Option | [Setup] | |
| OS Select For DRAM > 64MB | [Non-OS2] | |
| ↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults | | |

BIOS Features Setup Screen

The “BIOS FEATURES SETUP” allow you to configure your system for basic operation. The user can select the system’s default speed, boot-up sequence, keyboard operation, shadowing and security.

A brief introduction of each setting is given below.

CPU L1 & L2 CACHE :

This item allows you to enable L1 & L2 cache.

QUICK POWER ON SELF-TEST:

This item allows you to speed up Power On Self Test (POST) after power-up the computer. When enabled, the BIOS will shorten or skip some check items during POST.

FIRST/SECOND/ BOOT DEVICE:

The BIOS attempt to load the operating system from the devices in the sequence selected in these items.

BOOT UP FLOPPY SEEK:

You may enable / disable this item to define whether the system will look for a floppy disk drive to boot at power-on, or proceed directly to the hard disk drive.

BOOT UP NUMLOCK STATUS:

Select power on state for NumLock.

TYPEMATIC RATE SETTING:

Enable this item if you wish to be able to configure the characteristics of your keyboard. Typematic refers to the way in which characters are entered repeatedly if a key is held down. For example, if you press and hold down the "A" key, the letter "a" will repeatedly appear on your screen on your screen until you release the key. When enabled, the typematic rate and typematic delay can be selected.

TYPEMATIC RATE (CHARS/SEC):

This item sets the number of times a second to repeat a key stroke when you hold the key down.


TYPEMATIC DELAY (MSEC):

The item sets the delay time after the key is held down before it begins to repeat the keystroke.

SECURITY OPTION:

This category allows you to limit access to the system and Setup, or just to Setup.

| | |
|--------|---|
| System | The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt. |
| Setup | The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. |

 To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

OS SELECT FOR DRAM >64MB :

Select the operating system that is running with greater than 64MB or RAM on the system. You may choose OS2 or Non-OS2.

4-5. ADVANCED CHIPSET FEATURES

Choose the "ADVANCED CHIPSET FEATURES" from the main menu, the screen shown as below.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

| | | |
|---|-------------------|--------------|
| DRAM Timing Selectable | [By SPD] | Item Help |
| X CAS Latency Time | 2 | |
| X Active to Precharge Delay | 6 | |
| X DRAM RAS# to CAS# Delay | 3 | |
| X DRAM RAS# Precharge | 3 | Menu Level ► |
| System BIOS Cacheable | [Enabled] | |
| Video BIOS Cacheable | [Disabled] | |
| Memory Hole At 15M-16M | [Disabled] | |
| Delayed Transaction | [Enabled] | |
| AGP Aperture Size (MB) | [64] | |
| ** On-Chip VGA Setting ** | | |
| On-Chip VGA | [Enabled] | |
| On-Chip Frame Buffer Size | [32MB] | |
| Boot Display | [CRT] | |
| Panel Type | [640x480 18-bits] | |
| PCI SERR# NMI | [Disabled] | |
| ↑↓→←: Move Enter: Select +/-PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults | | |

Chipset Features Setup Screen

This parameter allows you to configure the system based on the specific features of the installed chipset. The chipset manages bus speed and access to system memory resources, such as DRAM and the external cache.

It also coordinates communications between conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for the system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

DRAM TIMING BY SELECTABLE:

This allows you to select the DRAM timing.

CAS LATENCY TIME:

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

ACTIVE TO PRECHARGE DELAY:

This item controls the number of DRAM clocks for TRAS.

DRAM RAS# TO CAS# DELAY:

This field let's you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

DRAM RAS# PRECHARGE:

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

DRAM DATA INTEGRITY MODE:

Select Parity or ECC (error-correcting code), according to the type of installed DRAM.

SYSTEM BIOS CACHEABLE:

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

VIDEO BIOS CACHEABLE:

Select Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

MEMORY HOLE AT 15M-16M:

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

DELAYED TRANSACTION:

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

AGP APERTURE SIZE:

This field determines the effective size of the Graphic Aperture used for a particular GMCH configuration. It can be updated by the GMCH-specific BIOS configuration sequence before the PCI standard bus enumeration sequence takes place. If it is not updated then a default value will select an aperture of maximum size.

ON-CHIP VGA :

By default, the On-Chip VGA or chipset-integrated VGA is “Enabled”.

ON-CHIP FRAME BUFFER SIZE: (depend on chipset)

The On-Chip Frame Buffer Size can be set as 1MB or 8MB. This memory is shared with the system memory.

BOOT DISPLAY: (depend on chipset)

Boot Display determines the display output device where the system boots. The options are CRT and LVDS.

PANEL TYPE: (depend on chipset)

This field allows user to decide the LVDS panel resolution. The available choices are: 640x480 18bits, 800x600 18bits, 1024x768 18bits, 1280x1024 36bits, 1400x1050 36bits, 1600x1200 36bits, and 1024x768 24bits.

4-6. INTEGRATED PERIPHERALS


Choose “INTEGRATED PERIPHERALS” from the main setup menu, a display will be shown on screen as below:

Phoenix - AwardBIOS CMOS Setup Utility
Integrated Peripherals

| | | |
|--|---------------|--------------|
| ▶ OnChip IDE Device | [Press Enter] | Item Help |
| ▶ Onboard Device | [Press Enter] | |
| ▶ SuperIO Device | [Press Enter] | Menu Level ▶ |
| Watch Dog Timer Select | [Disabled] | |
| Onboard Serial Port 3 | [3E8] | |
| Serial Port 3 Use IRQ | [IRQ10] | |
| Onboard Serial Port 4 | [2E8] | |
| Serial Port 4 Use IRQ | [IRQ11] | |
| ↑↓→←: Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults | | |

Integrated Peripherals Setup Screen

By moving the cursor to the desired selection and by pressing the <F1> key, the all options for the desired selection will be displayed for choice.

-  If bios setup menu item supports USB device boot, it will cause Win9x detects the same storages twice when the system is rebooted, and USB HDD will fail.
Note: this cause just happen under Win9x, the phenomenon is a limitation.

ONCHIP IDE DEVICE:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

Phoenix – Award CMOS Setup Utility
OnChip IDE Device

| | | |
|---------------------------|-----------|--------------|
| OnChip Primary PCI IDE | [Enabled] | Item Help |
| IDE Primary Master PIO | [Auto] | |
| IDE Primary Slave PIO | [Auto] | Menu Level ▶ |
| IDE Primary Master UDMA | [Auto] | |
| IDE Primary Slave UDMA | [Auto] | |
| OnChip Secondary PCI IDE | [Enabled] | |
| IDE Secondary Master PIO | [Auto] | |
| IDE Secondary Slave PIO | [Auto] | |
| IDE Secondary Master UDMA | [Auto] | |
| IDE Secondary Slave UDMA | [Auto] | |
| IDE HDD Block Mode | [Enabled] | |

↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Descriptions on each item above are as follows:

1. OnChip Primary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

2. Primary Master/Slave PIO

Secondary Master/Slave PIO

The four IDE PIO fields allow you to set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

3. Primary Master/Slave UDMA

Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If you hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

4. OnChip Secondary PCI IDE

Enable the secondary IDE channel.

5. IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

ONBOARD DEVICE:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

Phoenix – Award CMOS Setup Utility
Onboard Device

| | | |
|--|------------|--------------|
| USB Controller | [Enabled] | Item Help |
| USB 2.0 Support | [Enabled] | |
| USB Keyboard Support | [Disabled] | Menu Level ▶ |
| USB Mouse Support | [Disabled] | |
| AC97 Audio | [Auto] | |
| Onboard LAN | [Enabled] | |
| Init Display First | [Onboard] | |
| Onboard Lan2 | [Enabled] | |
| ↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults | | |

Descriptions on each item above are as follows:

1. USB Controller

This should be enabled if your system has a USB installed on the system board and you want to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

2. USB 2.0 Support

Enable the USB 2.0 controller.

3. USB Keyboard Support

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

4. USB Mouse Support

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB Mouse.

5. AC97 Audio

This item allows you to enable/disable to support AC97 Audio.

6. Onboard LAN

Enable onboard LAN chip.

7. Init Display First

This item allows you to decide to active whether PCI Slot or on-chip VGA first.

SUPER IO DEVICE:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

Phoenix – Award CMOS Setup Utility
SuperIO Device

| | | |
|--|------------|--------------|
| Onboard FDC Controller | [Enabled] | Item Help |
| Onboard Serial Port 1 | [3F8/IRQ4] | |
| Onboard Serial Port 2 | [2F8/IRQ3] | |
| UART Mode Select | [Normal] | Menu Level ► |
| X Rx/D, Tx/D Active | Hi, Lo | |
| X IR Transmission Delay | Enabled | |
| X UR2 Duplex Mode | Half | |
| X Use IR Pins | IR-Rx2Tx2 | |
| Onboard Parallel Port | [378/IRQ7] | |
| Parallel Port Mode | [SPP] | |
| X EPP Mode Select | EPP1.7 | |
| X ECP Mode Use DMA | 3 | |
| PWRON After PWR-Fail | [Off] | |
| ↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults | | |

Descriptions on each item above are as follows:

1. Onboard FDC Controller

Select Enabled if the system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled.

2. Onboard Serial Port 1/2

Select an address and corresponding interrupt for the first and second serial ports.

3. UART Mode Select

This item allows you to select UART mode.

- 4. RxD, TxD Active**
This item allows you to determine the active of RxD, TxD.
- 5. IR Transmission Delay**
This item allows you to enable/disable IR transmission delay.
- 6. UR2 Duplex Mode**
This item allows you to select the IR half/full duplex function.
- 7. Use IR Pins**
This item allows you to select IR transmission routes, one is RxD2m, TxD2 (COM Port) and the other is IR-Rx2Tx2
- 8. Onboard Parallel Port**
This item allows you to determine access onboard parallel port controller with which I/O address.
- 9. Parallel Port Mode**
Select an operating mode for the onboard parallel (printer) port.
Select *Normal*, *Compatible*, or *SPP* unless you are certain your hardware and software both support one of the other available modes.
- 10. EPP Mode Select**
Select EPP port type 1.7 or 1.9.
- 11. ECP Mode Use DMA**
Select a DMA channel for the parallel port for use during ECP mode.
- 12. PWRON After PWR-Fail**
This item allows you to select if you want to power on the system after power failure. The choice: Off, On, Former-Sts.

ONBOARD SERIAL PORT 3:

ONBOARD SERIAL PORT 4:

Select a logical COM port name and matching address for the third and forth serial ports. Select an address and corresponding interrupt for third and forth serial port.

SERIAL PORT 3 USE IRQ:

SERIAL PORT 4 USE IRQ:

The items set the IRQ address of the serial ports.

4-7. POWER MANAGEMENT SETUP

Choose "POWER MANAGEMENT SETUP" option on the main menu, a display will be shown on screen as below :

Phoenix - AwardBIOS CMOS Setup Utility
Power Management Setup

| | | |
|--|---------------|--------------|
| ACPI Function | [Enabled] | Item Help |
| Power Management | [User Define] | |
| Video Off Method | [DPMS] | Menu Level ► |
| Video Off In Suspend | [Yes] | |
| MODEM Use IRQ | [3] | |
| Suspend Mode | [Disabled] | |
| Soft-Off by PWR-BTTN | [Instant-Off] | |
| Wake-Up by PCI card | [Enabled] | |
| Resume by Alarm | [Disabled] | |
| x Date (of Month) Alarm | 0 | |
| x Time (hh:mm:ss) Alarm | 0 : 0 : 0 | |
| ** Reload Global Timer Events ** | | |
| Primary IDE 0 | [Disabled] | |
| Primary IDE 1 | [Disabled] | |
| Secondary IDE 0 | [Disabled] | |
| Secondary IDE 1 | [Disabled] | |
| FDD, COM, LPT Port | [Disabled] | |
| ↑↓→←: Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults | | |

Power Management Setup Screen

The "Power Management Setup" allows the user to configure the system to the most effectively save energy while operating in a manner consistent with your own style of computer use.

ACPI FUNCTION:

This item allows the user to set the ACPI suspend type to be used.

POWER MANAGEMENT:

This item allows you to select the Power Management mode.

VIDEO OFF METHOD:

This determines the manner in which the monitor is blanked.

| | |
|----------------|---|
| V/H SYNC+Blank | This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer. |
| Blank Screen | This option only writes blanks to the video buffer. |
| DPMS | Select this option if your monitor supports the Display Power Management Signalling (DPMS) standard of the Video Electronics Standards to select video power management values. |

MODEM USE IRQ:

This item enable you to name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

SUSPEND MODE:

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

SOFT-OFF BY PWR-BTTN:

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has “hung”. The choices are Delay 4 Sec and Instant-Off.

WAKE-UP BY PCI CARD:

An input signal from PME on the PCI card awakens the system from a soft off state.

RESUME BY ALARM:

When *Enabled*, you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

RELOAD GLOBAL TIMER EVENTS:

PM events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything, which occurs to a device which is configured as *Enabled*, even when the system is in a power down mode. (1) **Primary IDE 0** (2) **Primary IDE 1** (3) **Secondary IDE 0** (4) **Secondary IDE 1** (5) **FDD, COM, LPT Port**

4-8. PNP/PCI CONFIGURATION

Choose "PNP/PCI CONFIGURATION" from the main menu, a display will be shown on screen as below:

Phoenix - AwardBIOS CMOS Setup Utility
PnP/PCI Configurations

| | | |
|--|---------------|---|
| Reset Configuration Data | [Disabled] | Item Help |
| Resources Controlled By | [Auto (ESCD)] | Menu Level ► |
| x IRQ Resources | Press Enter | |
| PCI/VGA Palette Snoop | [Disabled] | Select Yes if you are using a Plug and Play capable operating system Select No if you need the BIOS to configure non-boot devices |
| ↑↓→←: Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults | | |

PNP/PCI Configuration Setup Screen

The PNP/PCI Configuration Setup describes how to configure PCI bus system. PCI, also known as Personal Computer Interconnect, is a system, which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.

This section covers technical items, which is strongly recommended for experienced users only.

RESET CONFIGURATION DATA:

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system configuration has caused such a serious conflict that the operating system cannot boot.

RESOURCE CONTROLLED BY:

The Award Plug and Play Bios can automatically configure all of the booth and Plug and Play-compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows 95. By choosing “manual”, you are allowed to configure the *IRQ Resources and DMA Resources*.

IRQ RESOURCES:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

Phoenix – Award CMOS Setup Utility IRQ Resources

| | | |
|--|--------------|--|
| IRQ-3 assigned to | [PCI Device] | Item Help |
| IRQ-4 assigned to | [PCI Device] | |
| IRQ-5 assigned to | [PCI Device] | |
| IRQ-7 assigned to | [PCI Device] | Menu Level ► |
| IRQ-9 assigned to | [PCI Device] | Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA |
| IRQ-10 assigned to | [PCI Device] | PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture |
| IRQ-11 assigned to | [PCI Device] | |
| IRQ-12 assigned to | [PCI Device] | |
| IRQ-14 assigned to | [PCI Device] | |
| IRQ-15 assigned to | [PCI Device] | |
| ↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults | | |

Descriptions on each item above are as follows:

13. IRQ-n Assigned to:

You may assign each system interrupt a type, depending on the type of device using the interrupt.

PCI/VGA PALETTE SNOOP:

Leave this field at Disabled.

4-9. PC HEALTH STATUS

Choose "PC HEALTH STATUS" from the main menu, a display will be shown on screen as below:

Phoenix - AwardBIOS CMOS Setup Utility
PC Health Status

| | | |
|---|------------|--------------|
| Current Warning Temperature | [Disabled] | Item Help |
| Current CPU Temperature | 48°C/118°F | Menu Level ▶ |
| Current SYSTEM Fan Speed | 0 RPM | |
| Vcore | 1.00V | |
| Vccp | 1.04V | |
| 3.3 V | 3.28V | |
| + 5 V | 4.73V | |
| +12V | 11.43V | |
| -12 V | -11.78V | |
| -5V | -4.79V | |
| VBAT (V) | 3.34V | |
| 5VSB (V) | 5.09V | |
| Shutdown Temperature | [Disabled] | |
| ↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults | | |

PC Health Status Setup Screen

The PC Health Status Setup allows you to select whether to choose between monitoring or to ignore the hardware monitoring function of your system.

CURRENT WARNING TEMPERATURE:

Select the combination of lower and upper limits for the CPU temperature. If the CPU temperature extends beyond either limit, any warning mechanism programmed into your system will be activated.

CURRENT CPU TEMPERATURE:

This item shows you the current CPU temperature.

CURRENT SYSTEM FAN SPEED:

This item shows you the current System FAN speed.

VCORE:

This item shows you the current system voltage.

3.3V / +5V / +12V / -12V / -5V / VBAT / 5VSB:

Show you the voltage of 3.3V/+5V/+12V/-12V/-5V/ VBAT/5VSB.

SHUTDOWN TEMPERATURE:

This item allows you to set up the CPU shutdown Temperature. This function is only effective under Windows 98 ACPI mode.

4-10. FREQUENCY CONTROL

Choose "FREQUENCY CONTROL" from the main menu, a display will be shown on screen as below:

| Phoenix - AwardBIOS CMOS Setup Utility | | |
|--|-----------|--------------|
| Frequency Control | | |
| Auto Detect PCI Clk | [Enabled] | Item Help |
| Spread Spectrum | [Enabled] | |
| | | Menu Level ▶ |
| ↑↓→←: Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults | | |

Frequency Control Setup Screen

This setup menu allows you to specify your settings for frequency control.

AUTO DETECT PCI CLK:

This item allows you to enable or disable auto detect PCI Clock.

SPREAD SPECTRUM:

When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme values from spikes to flat curves, thus reducing EMI. This benefit may in some cases be outweighed by problems with timing-critical devices such as a clock-sensitive SCSI device.

4-11. LOAD FAIL-SAFE DEFAULTS

By pressing the <ENTER> key on this item, you get a confirmation dialog box with a message similar to the following:

Load Fail-Safe Defaults (Y/N) ? N

To use the BIOS default values, change the prompt to "Y" and press the <Enter > key. CMOS is loaded automatically when you power up the system.

4-12. LOAD OPTIMIZED DEFAULTS

When you press <Enter> on this category, you get a confirmation dialog box with a message similar to the following:

Load Optimized Defaults (Y/N) ? N

Pressing "Y" loads the default values that are factory setting for optimal performance system operations.

4-13. SET SUPERVISOR PASSWORD


User is allowed to set either supervisor or user password, or both of them. The difference is that the supervisor password can enter and change the options of the setup menus while the user password can enter only but do not have the authority to change the options of the setup menus.

TO SET A PASSWORD

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Enter Password:

Type the password up to eight characters in length, and press < Enter >. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press the < Enter > key. You may also press < Esc > to abort the selection and not enter a password.

 User should bear in mind that when a password is set, you will be asked to enter the password everything you enter CMOS setup Menu.

TO DISABLE THE PASSWORD

To disable the password, select this function (do not enter any key when you are prompt to enter a password), and press the <Enter> key and a message will appear at the center of the screen:

PASSWORD DISABLED!!!
Press any key to continue...

Press the < Enter > key again and the password will be disabled. Once the password is disabled, you can enter Setup freely.

4-14. SAVE & EXIT SETUP

After you have completed adjusting all the settings as required, you must remember to save these setting into the CMOS RAM. To save the settings, select “SAVE & EXIT SETUP” and press <Enter>, a display will be shown as follows:

| Phoenix - AwardBIOS CMOS Setup Utility | |
|--|--|
| <ul style="list-style-type: none"> ▶ Standard CMOS Features ▶ Advanced BIOS Features ▶ Advanced Chipset Features ▶ Integrated Peripherals ▶ Power Management ▶ PnP/PCI Configura ▶ PC Health Status | <ul style="list-style-type: none"> ▶ Frequency Control Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password |
| <div style="border: 1px solid black; display: inline-block; padding: 5px;">Save to CMOS and EXIT Y/N)? Y</div> | |
| <div style="display: flex; justify-content: space-between;"> word etup Saving </div> | |
| <div style="display: flex; justify-content: space-between;"> Esc : Quit ↑↓→← : Select Item </div> | |
| F10 : Save & Exit Setup | |
| Save Data to CMOS | |

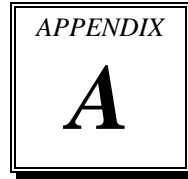
When you confirm that you wish to save the settings, your system will be automatically restarted and the changes you have made will be implemented. You may always call up the setup program at any time to adjust any of the individual items by pressing the key during boot up.

4-15. EXIT WITHOUT SAVING

If you wish to cancel any changes you have made, you may select the “EXIT WITHOUT SAVING” and the original setting stored in the CMOS will be retained. The screen will be shown as below:

| Phoenix - AwardBIOS CMOS Setup Utility | |
|--|-------------------------|
| ▶ Standard CMOS Features | ▶ Frequency Control |
| ▶ Advanced BIOS Features | Load Fail-Safe Defaults |
| ▶ Advanced Chipset Features | Load Optimized Defaults |
| ▶ Integrated Peripherals | Set Supervisor Password |
| ▶ Power Management | word |
| ▶ PnP/PCI Configura | etup |
| ▶ PC Health Status | Saving |
| Quit Without Saving (Y/N)? N | |
| Esc : Quit | ↑↓→← : Select Item |
| F10 : Save & Exit Setup | |
| Abandon all Datas | |

EXPANSION BUS



This appendix indicates the pin assignments.

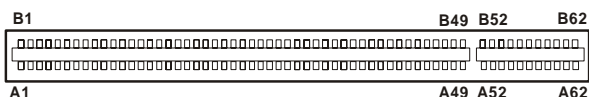
Section includes:

- PCI BUS Pin Assignment
- Mini-PCI BUS Pin Assignment
- Compact Flash Card Connector Pin Assignment

PCI BUS PIN ASSIGNMENT

Like ISA-BUS connector, the PCI-BUS edge connector is also divided into two sets: one consists of 98-pin; the other consists of 22-pin.

The pin assignments are as follows :



| B | | A | | B | | A | |
|-----|------------|-----|------------|-----|------------|-----|------------|
| PIN | ASSIGNMENT | PIN | ASSIGNMENT | PIN | ASSIGNMENT | PIN | ASSIGNMENT |
| B1 | -12V | A1 | TRST# | B31 | +3.3V | A31 | AD18 |
| B2 | TCK | A2 | +12V | B32 | AD17 | A32 | AD16 |
| B3 | GND | A3 | TMS | B33 | C/BE2# | A33 | +3.3V |
| B4 | TDO | A4 | TDI | B34 | GND | A34 | FRAME# |
| B5 | +5V | A5 | +5V | B35 | IRDY# | A35 | GND |
| B6 | +5V | A6 | INTA# | B36 | +3.3V | A36 | TRDY# |
| B7 | INTB# | A7 | INTC# | B37 | DEVSEL# | A37 | GND |
| B8 | INTD# | A8 | +5V | B38 | GND | A38 | STOP# |
| B9 | REQ3# | A9 | CLKC | B39 | LOCK# | A39 | +3.3V |
| B10 | REQ1# | A10 | +5V(I/O) | B40 | PERR# | A40 | SDONE |
| B11 | GNT3# | A11 | CLKD | B41 | +3.3V | A41 | SB0# |
| B12 | GND | A12 | GND | B42 | SERR# | A42 | GND |
| B13 | GND | A13 | GND | B43 | +3.3V | A43 | PAR |
| B14 | CLKA | A14 | GNT1# | B44 | C/BE1# | A44 | AD15 |
| B15 | GND | A15 | RST# | B45 | AD14 | A45 | +3.3V |
| B16 | CLKB | A16 | +5V(I/O) | B46 | GND | A46 | AD13 |
| B17 | GND | A17 | GNT0# | B47 | AD12 | A47 | AD11 |
| B18 | REQ0# | A18 | GND | B48 | AD10 | A48 | GND |
| B19 | +5V(I/O) | A19 | REQ2# | B49 | GND | A49 | AD09 |
| B20 | AD31 | A20 | AD30 | B52 | AD08 | A52 | C/BE0# |
| B21 | AD29 | A21 | +3.3V | B53 | AD07 | A53 | +3.3V |
| B22 | GND | A22 | AD28 | B54 | +3.3V | A54 | AD06 |
| B23 | AD27 | A23 | AD26 | B55 | AD05 | A55 | AD04 |
| B24 | AD25 | A24 | GND | B56 | AD03 | A56 | GND |
| B25 | +3.3V | A25 | AD24 | B57 | GND | A57 | AD02 |
| B26 | C/BE3# | A26 | GNT2# | B58 | AD01 | A58 | AD00 |
| B27 | AD23 | A27 | +3.3V | B59 | +5V(I/O) | A59 | +5V(I/O) |
| B28 | GND | A28 | AD22 | B60 | ACK64# | A60 | REQ64# |
| B29 | AD21 | A29 | AD20 | B61 | +5V | A61 | +5V |
| B30 | AD19 | A30 | GND | B62 | +5V | A62 | +5V |

MINI-PCI BUS CONNECTOR PIN ASSIGNMENT

You will find a Mini-PCI connector in our PMB-562LF.
The pin assignments are as follows:

| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | NC | 2 | NC |
| 3 | NC | 4 | NC |
| 5 | NC | 6 | NC |
| 7 | NC | 8 | NC |
| 9 | NC | 10 | NC |
| 11 | NC | 12 | NC |
| 13 | NC | 14 | NC |
| 15 | NC | 16 | NC |
| 17 | PIRQJF | 18 | VCC |
| 19 | VCC3_3 | 20 | PIRQJE |
| 21 | NC | 22 | NC |
| 23 | GND | 24 | NC |
| 25 | PPCLK | 26 | PCI_RSTJ |
| 27 | GND | 28 | VCC3_3 |
| 29 | PREQJ3 | 30 | PGNTJ3 |
| 31 | VCC3_3 | 32 | GND |
| 33 | AD31 | 34 | NC |
| 35 | AD29 | 36 | NC |
| 37 | GND | 38 | AD30 |
| 39 | AD27 | 40 | VCC3_3 |
| 41 | AD25 | 42 | AD28 |
| 43 | NC | 44 | AD26 |
| 45 | C_BEJ3 | 46 | AD24 |
| 47 | AD23 | 48 | IDSEL |
| 49 | GND | 50 | GND |
| 51 | AD21 | 52 | AD22 |
| 53 | AD19 | 54 | AD20 |
| 55 | GND | 56 | PAR |
| 57 | AD17 | 58 | AD18 |
| 59 | C_BEJ2 | 60 | AD16 |
| 61 | IRDYJ | 62 | GND |
| 63 | VCC3_3 | 64 | FRAMEJ |
| 65 | NC | 66 | TRDYJ |
| 67 | SERRJ | 68 | STOPJ |
| 69 | GND | 70 | VCC3_3 |

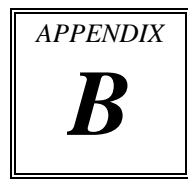
| | | | |
|-----|--------|-----|---------|
| 71 | PERRJ | 72 | DEVSELJ |
| 73 | C_BEJ1 | 74 | GND |
| 75 | AD14 | 76 | AD15 |
| 77 | GND | 78 | AD13 |
| 79 | AD12 | 80 | AD11 |
| 81 | AD10 | 82 | GND |
| 83 | GND | 84 | AD9 |
| 85 | AD8 | 86 | C_BEJ0 |
| 87 | AD7 | 88 | VCC3_3 |
| 89 | VCC3_3 | 90 | AD6 |
| 91 | AD5 | 92 | AD4 |
| 93 | NC | 94 | AD2 |
| 95 | AD3 | 96 | AD0 |
| 97 | VCC | 98 | NC |
| 99 | AD1 | 100 | NC |
| 101 | GND | 102 | GND |
| 103 | NC | 104 | NC |
| 105 | NC | 106 | NC |
| 107 | NC | 108 | NC |
| 109 | NC | 110 | NC |
| 111 | NC | 112 | NC |
| 113 | NC | 114 | GND |
| 115 | NC | 116 | NC |
| 117 | NC | 118 | NC |
| 119 | NC | 120 | NC |
| 121 | NC | 122 | NC |
| 123 | NC | 124 | NC |

COMPACT FLASH CARD CONNECTOR PIN ASSIGNMENT

The pin assignments of Compact Flash Card connector are stated below.

| PIN | ASSIGNMENT | PIN | Assignment |
|-----|------------|-----|------------|
| 1 | GND | 26 | -CD1 |
| 2 | D03 | 27 | D111 |
| 3 | D04 | 28 | D121 |
| 4 | D05 | 29 | D131 |
| 5 | D06 | 30 | D141 |
| 6 | D07 | 31 | D151 |
| 7 | -CS0 | 32 | -CS11 |
| 8 | A102 | 33 | -VS1 |
| 9 | -ATASEL | 34 | -IORD |
| 10 | A092 | 35 | -IOWR |
| 11 | A082 | 36 | -WE3 |
| 12 | A072 | 37 | INTRQ |
| 13 | VCC | 38 | VCC |
| 14 | A062 | 39 | -CSEL |
| 15 | A052 | 40 | -VS2 |
| 16 | A042 | 41 | -RESET |
| 17 | A032 | 42 | IORDY |
| 18 | A02 | 43 | -INPACK |
| 19 | A01 | 44 | -REG3 |
| 20 | A00 | 45 | -DASP |
| 21 | D00 | 46 | -PDIAG |
| 22 | D01 | 47 | D081 |
| 23 | D02 | 48 | D091 |
| 24 | -IOCS16 | 49 | D101 |
| 25 | -CD2 | 50 | GND |

TECHNICAL SUMMARY

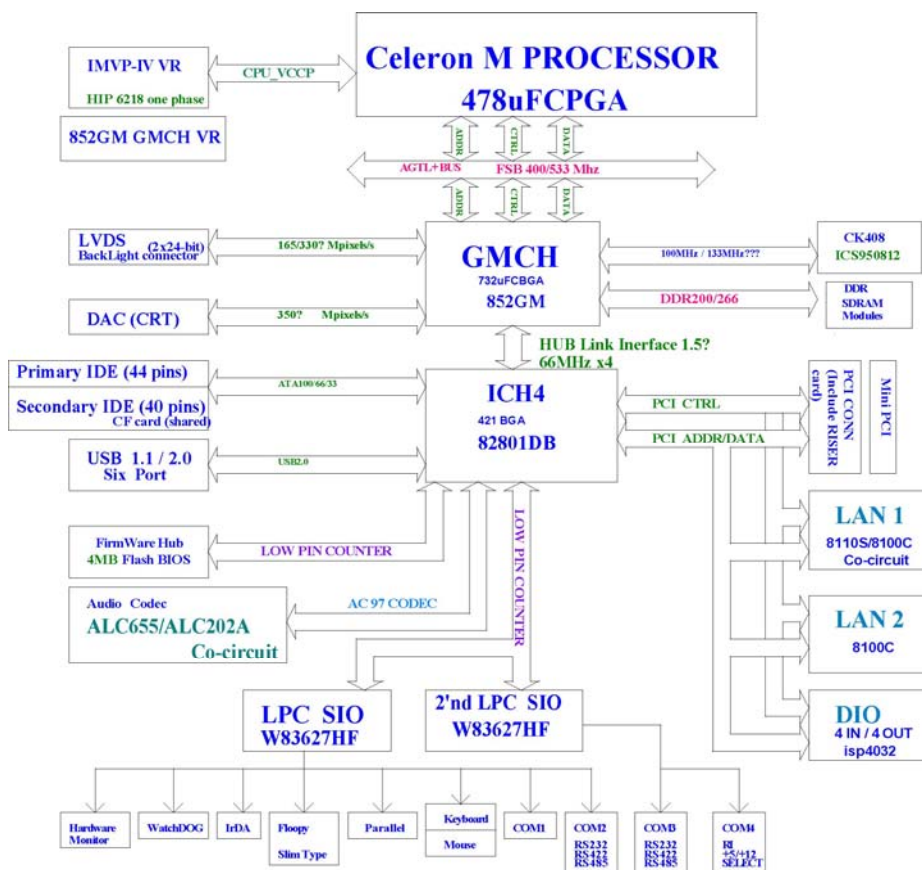


This section introduce you the maps concisely.

Section includes:

- Block Diagram
- Interrupt Map
- RTC & CMOS RAM Map
- Timer & DMA Channels Map
- I / O & Memory Map

BLOCK DIAGRAM



INTERRUPT MAP

| IRQ | ASSIGNMENT |
|-----|------------------|
| 0 | System TIMER |
| 1 | Keyboard |
| 2 | Cascade |
| 3 | Serial port 2 |
| 4 | Serial port 1 |
| 5 | Available |
| 6 | Floppy |
| 7 | Parallel port 1 |
| 8 | RTC clock |
| 9 | Available |
| 10 | Available |
| 11 | Available |
| 12 | PS/2 Mouse |
| 13 | Math coprocessor |
| 14 | IDE1 |
| 15 | IDE2 |

RTC & CMOS RAM MAP

| CODE | ASSIGNMENT |
|-------|---|
| 00 | Seconds |
| 01 | Second alarm |
| 02 | Minutes |
| 03 | Minutes alarm |
| 04 | Hours |
| 05 | Hours alarm |
| 06 | Day of week |
| 07 | Day of month |
| 08 | Month |
| 09 | Year |
| 0A | Status register A |
| 0B | Status register B |
| 0C | Status register C |
| 0D | Status register D |
| 0E | Diagnostic status byte |
| 0F | Shutdown byte |
| 10 | Floppy Disk drive type byte |
| 11 | Reserve |
| 12 | Hard Disk type byte |
| 13 | Reserve |
| 14 | Equipment byte |
| 15 | Base memory low byte |
| 16 | Base memory high byte |
| 17 | Extension memory low byte |
| 18 | Extension memory high byte |
| 30 | Reserved for extension memory low byte |
| 31 | Reserved for extension memory high byte |
| 32 | Date Century byte |
| 33 | Information Flag |
| 34-3F | Reserve |
| 40-7f | Reserved for Chipset Setting Data |

TIMER & DMA CHANNELS MAP

Timer Channel Map :

| Timer Channel | Assignment |
|----------------------|------------------------|
| 0 | System timer interrupt |
| 1 | DRAM Refresh request |
| 2 | Speaker tone generator |

DMA Channel Map :

| DMA Channel | Assignment |
|--------------------|-------------------|
| 0 | Available |
| 1 | Available |
| 2 | Floppy |
| 3 | Available |
| 4 | Cascade |
| 5 | Available |
| 6 | Available |
| 7 | Available |

I/O & MEMORY MAP

Memory Map :

| MEMORY MAP | ASSIGNMENT |
|-------------------|---|
| 0000000-009FFFF | System memory used by DOS and application |
| 00A0000-00BFFFF | Display buffer memory for VGA/ EGA / CGA / MONOCHROME adapter |
| 00C0000-00DFFFF | Reserved for I/O device BIOS ROM or RAM buffer. |
| 00E0000-00EFFFF | Reserved for PCI device ROM |
| 00F0000-00FFFFFF | System BIOS ROM |
| 0100000-FFFFFFFF | System extension memory |

I/O Map :

| I/O MAP | ASSIGNMENT |
|----------------|---|
| 000-01F | DMA controller (Master) |
| 020-021 | Interrupt controller (Master) |
| 022-023 | Chipset controller registers I/O ports. |
| 040-05F | Timer control registers. |
| 060-06F | Keyboard interface controller (8042) |
| 070-07F | RTC ports & CMOS I/O ports |
| 080-09F | DMA register |
| 0A0-0BF | Interrupt controller (Slave) |
| 0C0-0DF | DMA controller (Slave) |
| 0F0-0FF | Math coprocessor |
| 1F0-1F8 | Hard Disk controller |
| 278-27F | Parallel port-2 |
| 2B0-2DF | Graphics adapter controller |
| 2F8-2FF | Serial port-2 |
| 360-36F | Net work ports |
| 378-37F | Parallel port-1 |
| 3B0-3BF | Monochrome & Printer adapter |
| 3C0-3CF | EGA adapter |
| 3D0-3DF | CGA adapter |
| 3F0-3F7 | Floppy disk controller |
| 3F8-3FF | Serial port-1 |